UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/942,798	08/31/2001	Kazuyuki Matsuoka	0425-0846P	9781

2292 7590 09/08/2004

BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER	
FELTON, AILEEN BAKER	

ART UNIT	PAPER NUMBER
3641	

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/942,798	MATSUOKA ET AL.	
	Examiner	Art Unit	
	Aileen B. Felton	3641	MW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 May 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,9-17,24-29 and 32* is/are pending in the application.

4a) Of the above claim(s) *14,16,17,27,28* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,9-13,15,24-26,29 and 32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-3, 9-12, 15, 24-26, 29, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Highsmith et al (5,682,014) in view of Castagner et al (5,160,163) and Takase et al(4,572,178).

Highsmith et al discloses a gas generating composition for use in an air bag which comprises 10-50 % of a nitrogen containing fuel such as bitetrazolamine, 50-90 % of an oxidizer such as copper oxode which can be combined with other oxidizers such as strontium nitrate (col. 4, lines 41-59). In col. 1, Highsmith discusses that one goal of the invention is to reduce the amount of toxic gases such as CO. There is no disclosure of surface area or mixtures of oxides as a catalyst.

Castagner et al teaches the use of a catalyst such as Hopcalite® that is inside the inflatable bag of an air bag device which acts to absorb or dissociate the CO produced upon activation of the air bag composition (co. 4, lines 30-40).

Takase et al teaches that Hopcalite® is mixture of 22 % copper oxide and 78 % manganese oxide with a specific surface area of 217 m^2/g (col. 5, lines 1-5). The Hopcalite® is used in an emergency mask to remove CO.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the teaching of the catalyst of Castagner mixed with the composition of Highsmith since Highsmith suggests that one goal is to reduce the amount of toxic gases such as CO and Castagner teaches that a catalyst can remove CO that is produced by the gas generating composition in an air bag system. Takase et al merely teaches the specific chemical makeup of Hopcalite®. It is also obvious to vary the amounts of the ingredients in the gas generating composition. It is well-settled that optimizing a result effective variable is well within the expected ability of a person of ordinary skill in the subject art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980), In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1955).

3. Claims 1-3, 9-12, 15, 24-26, 29, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor et al (5,467,715) in view of Plantif et al (3,964,256), Castagner et al (5,160,163), and Takase et al(4,572,178).

Taylor et al discloses a gas generating composition that comprises 20-40 % of a fuel such as a tetrazole and 20-80 % of oxidizer which is 20-100 % of a transition metal oxide with preferably at least 50 % of the oxidizer being alkaline earth metal nitrates (col. 2, lines 18-30). Taylor discloses that the levels of toxic oxides, such as CO, can be reduced by using a gas generant mixture which burns at lower temperatures (col. 1, lines 40-49). Also disclosed is the use of a catalyst such as manganese oxide (col. 3, lines 54-60). The specific details regarding the catalyst are not disclosed.

Plantif et al teaches gas generating compositions that use various additives to decrease toxic gases such as CO. Plantif teaches that manganese dioxide lowers the decomposition temperature.

Castagner et al teaches the use of a catalyst such as Hopcalite® that is inside the inflatable bag of an air bag device which acts to absorb or dissociate the CO produced upon activation of the air bag composition (co. 4, lines 30-40).

Takase et al teaches that Hopcalite® is mixture of 22 % copper oxide and 78 % manganese oxide with a specific surface area of 217 m^2/g (col. 5, lines 1-5). The Hopcalite® is used in an emergency mask to remove CO.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the teaching of the catalyst of Plantif mixed with the composition of Taylor since Taylor suggests that one goal is to reduce the amount of toxic gases such as CO and that this goal can be achieved by reducing the temperature and Taylor also discloses the use of a manganese oxide catalyst. Plantif also teaches that it is known to use manganese dioxide to lower the temperature and reduce CO formation. Castagner teaches that a catalyst such as Hopcalite® which comprises manganese dicoxide is known and can remove CO that is produced by the gas generating composition in an air bag system. Takase et al merely teaches the specific chemical makeup of Hopcalite®. It is also obvious to vary the amounts of the ingredients in the gas generating composition. It is well-settled that optimizing a result effective variable is well within the expected ability of a person of ordinary skill in the

subject art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980), In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1955).

4. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor et al (5,467,715) in view of Plantif et al (3,964,256), Castagner et al (5,160,163), and Takase et al(4,572,178) as applied to claims 1-3, 9-12, 15, 24-26, 29, and 32 above, and further in view of Mitson et al(5,518,054).

Mitson teaches the use of various fuels such as tetrazoles and dicyandiamide in a gas generating composition for use in an air bag.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use dicyandiamide fuel in place of the tetrazole fuel of Taylor since it is obvious to substitute on known fuel for another. Where the ingredients are well known and combined for their known properties, the combination is obvious absent unexpected results, *In re Crocket*, 126 USPQ 186, *In re Pinten*, 173 USPQ 801, and *In re Sussman*, 43 CD 518.

Response to Arguments

5. Applicant's arguments filed 5/26/2004 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. The prior art that was previously made of record and not relied upon is considered pertinent to applicant's disclosure.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aileen B. Felton whose telephone number is

703.306.5751. The examiner can normally be reached on Monday-Friday 6:30-4:00, except alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on 703.306.4198. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Aileen Felton

AILEEN FELTON
PRIMARY EXAMINER